ALI FOROOTANI

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Address: ICT, 416B, University of
Calgary, Calgary, Alberta, Canada
(International Student)

EDUCATION

Ph.D **University of Calgary**   July 2023 – Present
Electrical and Software Engineering
Supervisor: Prof. Hamidreza Zareipour

M.Sc **Shiraz University**   September 2019 – September 2022
Power Systems Engineering
GPA: 17.01/20
Thesis: "**Multi-Agent Deep Reinforcement Learning for Smart Home Energy Management**"
Thesis Grade: 20/20
Supervisor: Dr. Mohammad Rastegar

B.Sc **Shiraz University**   September 2015 –September 2019
Electrical Engineering
GPA: 16.29/20
Thesis: "**Investigation and Simulation of Energy Management System of a Hybrid Electric Vehicle Using MATLAB Simulink**"
Thesis Grade: 19.5/20
Advisor: Dr. Mohammad Rastegar

RESEARCH AREAS

- Forecasting
- Energy Management
- Electric Vehicle Smart Charging
- Deep Learning
- Reinforcement Learning

VOLUNTEERING

1. Member of student committee at the 10th international conference on Power Electronics, Drive Systems and Technologies (PEDSTC), General chair: Prof. Ebrahim Farjah, Registration Chair: Dr. Mohammad Rastegar.
2. Member of IEEE Iran Section, Student Branch, Shiraz University.
3. Member of Association of Electrical Engineering, Shiraz University.

WORK EXPERIENCE

1. Manager of "Power system automation and analysis" Section using python at Faryan Sanat Pars Corporation, for 1 year and a half, CEO: Hamid Fakharzadegan.

2. Part of Automation Project of Shiraz Distribution System: optimal switch placement specialist, for 3 months, supervised by Dr. Mohammad Rastegar.
3. Internship: Research and development (R&D) specialist in Novin Afra (3 months), Achievement: Invited as a speaker on behalf of the company for the 34th International Power System Conference, to be held during Dec 9-11, 2019 in Tehran, Iran

AWARDS & HONORS

- Awarded from IEEE Iran Section, Student Branch, Shiraz University, for teaching a course on "Deep Learning Using python", June 2022, Counselor: Dr. Mohammad Hassan Asemani, Dean of School: Prof. Mohammad Mohammadi
- Awarded from Shiraz University Scientific Association of Electrical Engineering for teaching a course on "Machine Learning Using python", February 2021, Vice Dean: Dr. Mohammad Rastegar, Dean of School: Prof. Farzad Mohajeri
- Ranked among the top five students among all power electrical engineering students at Shiraz University and accepted as the exceptional talent for M.Sc. at Shiraz University without entrance exam.
- Best paper award for conference paper "Home Energy Management Using Multi-Agent Reinforcement Learning" in the 10th Smart Grid Conference (SGC2020).

JOURNAL PUBLICATIONS

1. A. Forootani, M. Rastegar and H. Zareipour, "Transfer Learning-based Framework Enhanced by Deep Generative Model for Cold-Start Forecasting of Residential EV Charging Behavior," in *IEEE Transactions on Intelligent Vehicles*, DOI: 10.1109/TIV.2023.3328458.
2. A. Forootani, M. Rastegar and M. Jooshaki, "An Advanced Satisfaction-Based Home Energy Management System Using Deep Reinforcement Learning," in *IEEE Access*, vol. 10, pp. 47896-47905, 2022. DOI: 10.1109/ACCESS.2022.3172327.
3. A. Forootani, M. Rastegar, A. Sami, "Short-Term Individual Residential Load Forecasting Using an Enhanced Machine Learning-based Approach based on a Feature Engineering Framework: A Comparative Study with Deep Learning Methods", in Electric Power System Research Journal, vol. 210, September 2022. DOI: 10.1016/j.epsr.2022.108119
4. A. Forootani, M. Rastegar, "Home Energy Management Using Multi-Agent Reinforcement Learning", in Energy Engineering and Management, vol. 12, no. 1, 2022. DOI: 10.22052/12.1.64.

TEACHING EXPERIENCES

1. Teaching a course on "Deep Learning using Python", 10 sessions, Organized by IEEE Iran Section, Student Branch, Shiraz University, June 2022, Counselor: Dr. Mohammad Hassan Asemani.

2. Teaching a course on "Machine learning using Python", 10 sessions, Organized by the Scientific Association of Electrical Engineering at Shiraz University, February 2021, Vice Dean: Dr. Mohammad Rastegar.
3. Teaching Assistant, Prof. Alireza Seifi, Modelling and Control of Electric Machines and Drives, Fall 2023
4. Teaching Assistant, Dr. Mohammad Rastegar, Electrical Machines I, Fall 2018
5. Teaching Assistant, Dr. Mohammad Rastegar, Power System Analysis I, Winter 2018
6. Teaching Assistant, Dr. Mohammad Rastegar, Electrical Machines II, Fall 2020
7. Teaching Assistant, Dr. Mohammad Rastegar, Power System Analysis I, Winter 2021

REVIEW EXPERIENCE

1. IEEE Transaction on Power Systems: Invited Reviewer
2. IEEE Transaction on Industrial Informatics: Invited Reviewer
3. IEEE Transactions on Vehicular Technology: Invited Reviewer
4. IEEE Access: Invited Reviewer
5. Iranian Journal of Science and Technology, Transaction of Electrical Engineering: Invited Reviewer

SOFTWARE

1. Python (TensorFlow, Keras, Numpy, Pandas, Scikit-learn, SciPy, and so forth)
2. MATLAB and Simulink
3. C++
4. DIgSILENT

SELECTED COURSES & GRADES

Graduate
- Reliability Evaluation of Power Systems, Dr. Mohammad Rastegar, 19/20
- Modern Power Systems' Operation, Dr. Mohammad Rastegar, 17/20
- Reinforcement Learning and Deep Learning, Dr. Peyaman Setoodeh, 17.85/20
- Data Mining, Prof. Ashkan Sami, 17.5/20
- Power Electronic 1, Prof. Ebrahim Farjah, 18.7/20
- Thesis, Dr. Mohammad Rastegar, 20/20

Undergraduate
- Internship, Dr. Mohamad Rastegar, 20/20
- Engineering Mathematics, Dr. Ali Haghdel, 19.7/20
- Computer programming (C++), Dr. Elham Hosseini, 20/20

LANGUAGE

- Persian: Native
- English: Fluent
  IELTS Academic exam: Overall: 7.5
  Reading: 7.5   Listening: 7.5
  Speaking: 7.5   Writing: 7

REFERENCES

1. Prof. Hamidreza Zareipour, Full Professor at University of Calgary, h.zareipour@ucalgary.ca
2. Dr. Mohammad Rastegar, Associate Professor at Shiraz University, mohammadrastegar@shirazu.ac.ir
3. Dr. Mohammad Jooshaki, Research Scientist at Geologian Tutkimuskeskus (GTK), mohammad.jooshaki@gtk.fi